

WORK SAFETY REVIEW AND AUTHORIZATION

Purpose This Meteorology and Air Quality Group (MAQ) procedure describes the steps to document, review for safety considerations, and obtain authorization for all non-office work as required by [IMP 300-00-00](#).

Scope This procedure applies to the determination of risk and hazard levels of work as required by MAQ-022 during preparation or revision of procedures, and the hazard evaluation and authorization of non-office work that is not covered by an existing procedure.

In this procedure This procedure addresses the following major topics:

| Topic | See Page |
|--|----------|
| General Information About This Procedure | 2 |
| Who Requires Training to This Procedure? | 2 |
| Summary of Process | 4 |
| Prepare Hazard Reviews | 6 |
| Prepare IWD | 9 |
| Changes to Work Conditions | 11 |
| Annual Review of HRs and IWDs | 12 |
| Records Resulting from This Procedure | 13 |

Signatures

| | |
|---|-------------------------------------|
| Prepared by: _____ Terry Morgan, QA Officer | Date: <u>10/29/04</u> |
| Work authorized by: _____ Jean Dewart, MAQ Group Leader | Date: <u>11/2/04</u> |

11/05/04

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Users are responsible for ensuring they work to the latest approved revision.

General information about this procedure

Attachments This procedure has the following attachments:

| Number | Attachment Title | No. of pages |
|--------|---|--------------|
| 1 | Sample of Hazard Review | 2 |
| 2 | Risk Determination Matrix: Likelihood vs Severity | 1 |
| 3 | Integrated Work Document Process Flow | 1 |

History of revision

This table lists the revision history and effective dates of this procedure.

| Revision | Date | Description of Changes |
|----------|----------|---|
| 0 | 7/8/98 | New document. |
| 1 | 02/12/99 | Added block on inclusion of waste resulting from process. |
| 2 | 8/13/99 | Revised to address changes to ESH-17-022 to integrate HCPs into procedures. |
| 3 | 11/5/04 | Revised to address new IMP 300-00-00 requirements and implement HR process. |

Who requires training to this procedure?

The following personnel require training before implementing this procedure:

- any group employee assigned to perform a hazard analysis on a procedure or for other work

Annual retraining is required and will be by self-study (“reading”) training.

Training method

The training method for this procedure is “**self-study**” (**reading**) and is documented in accordance with the procedure for training (MAQ-024).

Prerequisites

In addition to training to this procedure, the following training is also required prior to performing this procedure:

- **all workers:** on-line course #31881 “General IWM Overview”
- **IWD Preparers:** on-line course #31883 (training plan 6958) and JHA Tool course #28008
- **persons-in-charge (PICs):** On-line course #31884

General information, continued

Definitions specific to this procedure

Activity: A subset of a project describing floor-level work, comprised of one or more tasks.

Non-office work: any hands-on work activity that involves the use of equipment or tools.

Step: A subset of a task, typically sequenced into an IWD, procedure, or work instruction, having a discrete set of related hazards and controls.

Task: A subset of an activity comprised of one or more steps and often having different hazards than other tasks within the activity.

References

The following documents are referenced in this procedure:

- MAQ-022, "Preparation, Review, and Approval of Procedures"
 - MAQ-024, "Personnel Training"
 - [IMP 300-00-00](#), "Integrated Work Management for Work Activities"
 - [LIR404-00-05](#), "Managing Radioactive Waste"
 - [LIR404-00-02](#), "General Waste Management Requirements"
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Note

Actions specified within this procedure, unless preceded with "should" or "may," are to be considered mandatory guidance (i.e., "shall").

Summary of process

Background

Only authorized work is permitted at the Laboratory. IMP 300-00-00 implements Laboratory requirements for hazard evaluation and mitigation. This procedure is used in conjunction with IMP 300-00-00 to document planning, safety evaluation, and authorization to perform non-office work. The process is based on the five steps for safety review:

1. Define the work.
 2. Identify and evaluate hazards.
 3. Develop and implement controls.
 4. Perform work safely.
 5. Provide feedback and continuous improvement.
-

Summary of process

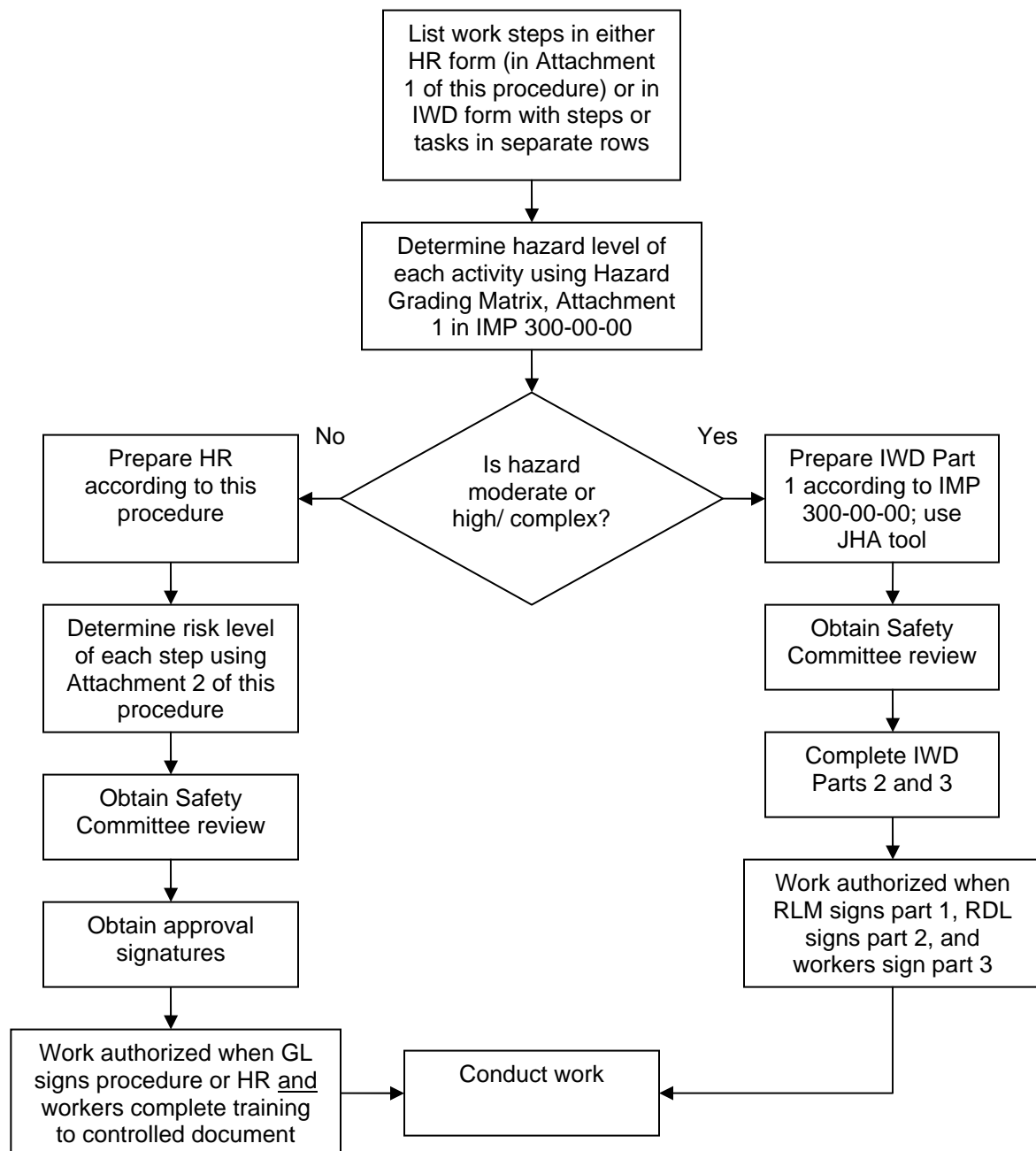
The steps involved in safety reviews in MAQ are described in the following chapters. The basic steps are:

- list all major steps (may reference the steps for a task in a procedure) and associated hazards. Prepare HR on either the form in Attachment 1 of this procedure, or Part 1 of an IWD (depending on what will likely be the final product – note that the first three columns of the IWD and HR are the same).
- For whole activity, determine hazard level according to Attachment 1 “Hazard Grading Matrix” in IMP 300-00-00.
 - If Moderate or High/complex, prepare an IWD for the work.
 - If low hazard, for each step or task, determine likelihood/severity and risk using Attachment 2 of this procedure.
- Get Safety Committee review of HR or IWD.
- For HRs, work is authorized when Group Leader approves procedure or HR AND when worker training to HR or procedure is completed.
- For IWDs, work is authorized when parts 1, 2, and 3 of IWD are signed.

Summary of process, continued

Flow chart summary of process

The following flow chart summarizes the process for work review and authorization.



Define work and determine hazard level

| | |
|---|--|
| Define work steps | Prepare a list of the work <i>steps</i> or <i>tasks</i> on either the form in Attachment 1 of this procedure, or Part 1 of an IWD, depending on what will likely be the final product. Note that the first three columns of the IWD and HR are the same. |
| Describe work | <p>In the appropriate column of the form, describe:</p> <ul style="list-style-type: none">• Each <i>step</i> or <i>task</i> of the work (for procedures, may refer to the activity as described in the procedure).• Associated hazards of the <i>step</i> or <i>task</i>.• Preventive measures and controls to be used to mitigate the hazards. |
| Determine hazard level | Determine the hazard level of the work to be performed according to the Hazard Grading Matrix (Attachment 1) in IMP 300-00-00 (Low, Moderate, High/Complex). IWDs are required for all moderate and high/complex work; HRs are required for all non-office work not covered by an IWD. |
| Separate moderate and low hazards if appropriate | <p>In some cases, the moderate-hazard tasks will be included in an IWD and the low-hazard tasks may be included in an HR. In these cases, <u>both</u> an HR and IWD may be prepared. Consult with the QA Officer, the team leader, and/or the facility RDL to help determine whether this is appropriate.</p> <p>Note that some facility RDLs may want to see all the work done in their facility described in the IWD, not just moderate-hazard activities. Also, even if an IWD is not required, some RDLs may want an IWD for any work done in their space, regardless of hazard level. A third possibility is an RDL who wants only an IWD part 2 for the low-hazard work. Prepare an IWD as the RDL requests.</p> |
| Prepare IWD for moderate and high hazards | If the hazard level of a task is moderate or high/ complex according to the Hazard Grading Matrix (Attachment 1) in IMP 300-00-00, prepare an IWD for that task according to the chapter <i>Prepare IWD</i> in this procedure. Attachment 3 in this procedure describes roles and responsibilities for IWD development and maintenance. |
| Prepare HR for low hazards | If the hazard level of the activity is low according to the Hazard Grading Matrix (Attachment 1) in IMP 300-00-00, prepare a Hazard Review (HR) for that activity according to the chapter <i>Prepare Hazard Reviews</i> in this procedure. |

Prepare Hazard Reviews

- Types of HRs** HRs may be either:
- stand-alone (for one-time processes or for routine processes without a procedure) **or**
 - attachment 1 to a procedure.
-

- Forms for HR** Use the form in attachment 1 of this procedure to prepare the HR.
- For stand-alone HRs, use the form with a cover page with the purpose, scope, signatures, and history of revision.
 - For HR attachments to a procedure, make the HR attachment 1 of the procedure (see MAQ-022).
-

- Determine HR risk level** Determine the risk level (likelihood/ severity) of each task or step of the work and resulting risk level (after “normal” controls are considered) from Attachment 2 of this procedure. Enter in column 2 of the HR form.
-

- Consider other expert reviews** If the risk level of a step is “medium” or “high” on the matrix in Attachment 2, **OR** if special hazards are present for which there is no group-level expertise, evaluate whether an IWD is needed instead of an HR. If an HR is still appropriate, the **team leader** or **Safety Committee** should request a review by subject matter experts in appropriate ES&H groups. If such a review is needed, ensure that required safety approvals or forms (e.g., a Special Work Permit or Radiation Work Permit) are prepared and receive appropriate reviews and approvals. Include on the form (in “controls” column) and in the procedure (if applicable) any such special work permit requirements.
-

- Describe waste generated** Describe the handling and processing of any waste generated as a result of the work process in the space at the bottom of the HR. Include wastes for which a waste profile form must be prepared and those wastes that are recycled. If questions arise, confer with the waste management coordinator for the facility. For more information, see LIR404-00-02 and LIR404-00-05. Document waste handling steps in a row of the HR form and, if a procedure is applicable, ensure required steps are incorporated into the procedure for the process.

NOTE: If a process generates radioactive or hazardous waste for which a waste profile form must be prepared, individuals (waste generators) performing the process must receive waste generator training. If the waste is recycled, waste generator training is not required.

Prepare Hazard Reviews, continued

Numbering of HRs For new (revision 0) stand-alone HRs only, contact the QA Officer for a unique identifier for the HR. HR identifiers will have the format
<group letters>-HR-<unique letters or number>-Rn.

For example, MAQ-HR-SnowBlower-R0 is revision 0 of the HR for use of the snow blower.

Stand-alone HRs will be tracked with their own revision numbers. The **QA staff** will revise and post the whole HR if one part is changed.

Review of HRs Present the final draft of the HR to the Safety Committee for review at the next scheduled meeting. The MAQ Safety Committee will review all HRs for consistency and thoroughness. This step may be skipped at the group leader's discretion in cases where revisions are minor or work scheduling does not allow time for review by the Safety Committee.

Complete IWD Part 2 If the RDL requests, prepare a IWD Part 2 form for the RDL for the facility where the work will be performed. This form will document the RDL's acceptance of the work to be performed in the facility. Forward the completed form to the group records coordinator be filed as a record.

Authorization of HR To indicate approval to perform the work, the **group leader** signs the cover page (for stand-alone HRs) or the procedure cover page (for HRs as an attachment to a procedure). Workers are not authorized to perform the work until their training to the HR is completed (see second block below).

Forward for distribution After completion of stand-alone HRs, forward the completed HR to the document control coordinator to be distributed as a controlled document and entered into the training system (EDS) according to MAQ-030.

Training to HR **Workers** document training to stand-alone HRs (this constitutes authorization to perform work according to the HR) by either completing a training form according to MAQ-024 ("Personnel Training") or using the automated training validation system link at the back of the document.

Prepare IWD

Prepare IWD If an IWD is required (see chapter *Define work and determine hazard level*), the **IWD preparer** prepares the IWD in accordance with the requirements and format specified in IMP 300-00-00.

Multiple IWD for the same procedure If an IWD is associated with a procedure, there may be multiple IWDs for the same procedure, because the work may be performed in different facilities that require different RDLs to approve Part 2 of the IWD form.

A stand-alone IWD may be created for one-time processes or for routine processes without a procedure.

Numbering of IWDS The **IWD preparer** contacts the QA Officer for a unique identifier for the IWD. IWD identifiers will have the format
<group letters>-IWD-<procedure number>-<facility/building>-Rn.

For example, MAQ-IWD-102-TA54-029-R0 is revision 0 of the IWD for procedure 102 at TA-54 Building 29.

IWDs will be tracked with their own revision numbers. The QA staff will update and post the whole IWD if one part is changed (MAQ will not attempt to separately track revisions of each part of the IWD, as allowed in the IMP).

Review of IWD The **IWD preparer** presents the final draft of Part 1 of the IWD to the MAQ Safety Committee for review at the next scheduled meeting. The MAQ Safety Committee will review all IWDs for consistency and thoroughness. This step may be skipped at the group leader's discretion in cases where revisions are minor or work scheduling does not allow time for review by the Safety Committee.

If the RDL later has significant changes to the safety aspects, repeat above step.

Prepare IWD, continued

Obtain RDL approval signatures

After review by the Safety Committee, the **preparer**, with assistance from the **QA Officer**, completes a Part 2 of the IWD for each separate RDL where the work will be performed.

Complete Part 3 of IWD; authorization for work

After approval by the RDL, the **preparer** completes Part 3 of the IWD form and obtains the signature of all workers. Work is authorized after all required signatures are complete on parts 1, 2, and 3.

Distribute IWD

After approval by the RDL, the **preparer**, with assistance from the **QA Officer**, performs the following:

- Combine the parts 1, 2, and 3 into one document with a common revision number.
 - Scan and save the signed document as a PDF file and mark it as “information copy” (e.g., with watermark).
 - Provide a copy to the records coordinator for filing.
 - Mark the signed paper copy as “original” and forward to the person-in-charge (PIC) for the work.
 - Forward the completed PDF file of the IWD to the document control coordinator to be filed and an information copy to be posted to the controlled document web page according to MAQ-030.
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If new signatures are added

If new signatures are added later (e.g., additional workers or approvers), the **person-in-charge (PIC)** ensures the document control coordinator and the **QA Officer** are notified. Ensure the newly-signed document is posted on the web as described above. The addition of a signature does not require a revision.

Field modification of IWD

As permitted by IMP 300-00-00, the **person-in-charge (PIC)** may make certain types of changes to the IWD in the field by marking the original copy of the IWD and initialing and dating. The **PIC** ensures such changes are re-scanned or captured in a new electronic version to be posted as described above.

Changes to work conditions

Notify of changes in work conditions

Workers following a procedure or performing work to a Hazard Review or IWD are expected to notify the group leader, team leader, or other line managers if they identify new hazards or needed improvements to the work process. If changes are necessary to incorporate new concerns or improvements, the **group leader** or **safety officer** may rescind the existing Hazard Review, stop work, and initiate a new Hazard Review or IWD. If the Hazard Review is for a procedure, initiate a procedure revision in accordance with MAQ-022.

Annual review of HRs and IWDs

Annual review of existing Hazard Reviews The **QA officer** tracks last reviews and initiates a review of existing Hazard Reviews and IWDs that are one year old. Hazard Reviews that are part of a procedure will be reviewed when the procedure receives its annual review.

If changes are needed If changes are necessary:

- For HRs in a procedure, the **QA Officer** initiates a revision of the appropriate procedure (MAQ-022).
- For stand-alone HRs, the **QA Officer** initiates a revision of the HR.
- For IWDs, the **QA Officer** initiates a revision of the IWD.

If no changes are needed If no changes are necessary, the **QA officer** documents the review in minutes of a meeting or a memo to file.

Records resulting from this procedure

Records

The following records are generated as a result of this procedure and are to be submitted **within one week of completion** as a record to the records coordinator:

- Hazard Review form (Attachment 1 with cover page) for low-hazard work
- IWD consisting of Parts 1, 2, and 3 prepared according to IMP 300-00-00 for moderate- and high-hazard work
- IWD Part 2 for low-hazard work
- Documentation of annual review of stand-alone HRs (e.g., memo to file)

NOTE: The Hazard Review form (Attachment 1), when first attachment to applicable procedure, will be submitted as a record with the procedure (see MAQ-022).

[Click here to record “self-study” training to this procedure.](#)

SAMPLE: Hazard Review and Work Authorization for

Purpose

This Meteorology and Air Quality Group (MAQ) hazard review (HR) describes

Scope

This HR applies to the _____ at TA-_____, Building _____, Room _____.

History of revision

This table lists the revision history and effective dates of this Hazard Review.

| Revision | Date | Description Of Changes |
|----------|------|------------------------|
| 0 | | New document. |

Signatures

| | | | |
|---|----------------|---|----------------|
| Prepared by: _____, MAQ | Date: _____ | Approved by: _____, Project Leader, MAQ | Date: _____ |
| Approved by: _____ Terry Morgan, QA Officer | Date: _____ | Work authorized by: _____ Jean Dewart, MAQ Group Leader | Date: _____ |

Meteorology and Air Quality Group
HAZARD REVIEW

This form is from MAQ-035

| Work tasks/Steps | Hazards, Concerns, and Potential accidents; Likelihood/ Severity | Controls, Preventive Measures (e.g., safety equipment, administrative controls, etc.) | Hazard Level from IMP 300-00-00 Hazard Grading Matrix |
|------------------|--|---|---|
| | | | |
| | | | |
| | | | |

Wastes or
residual
materials

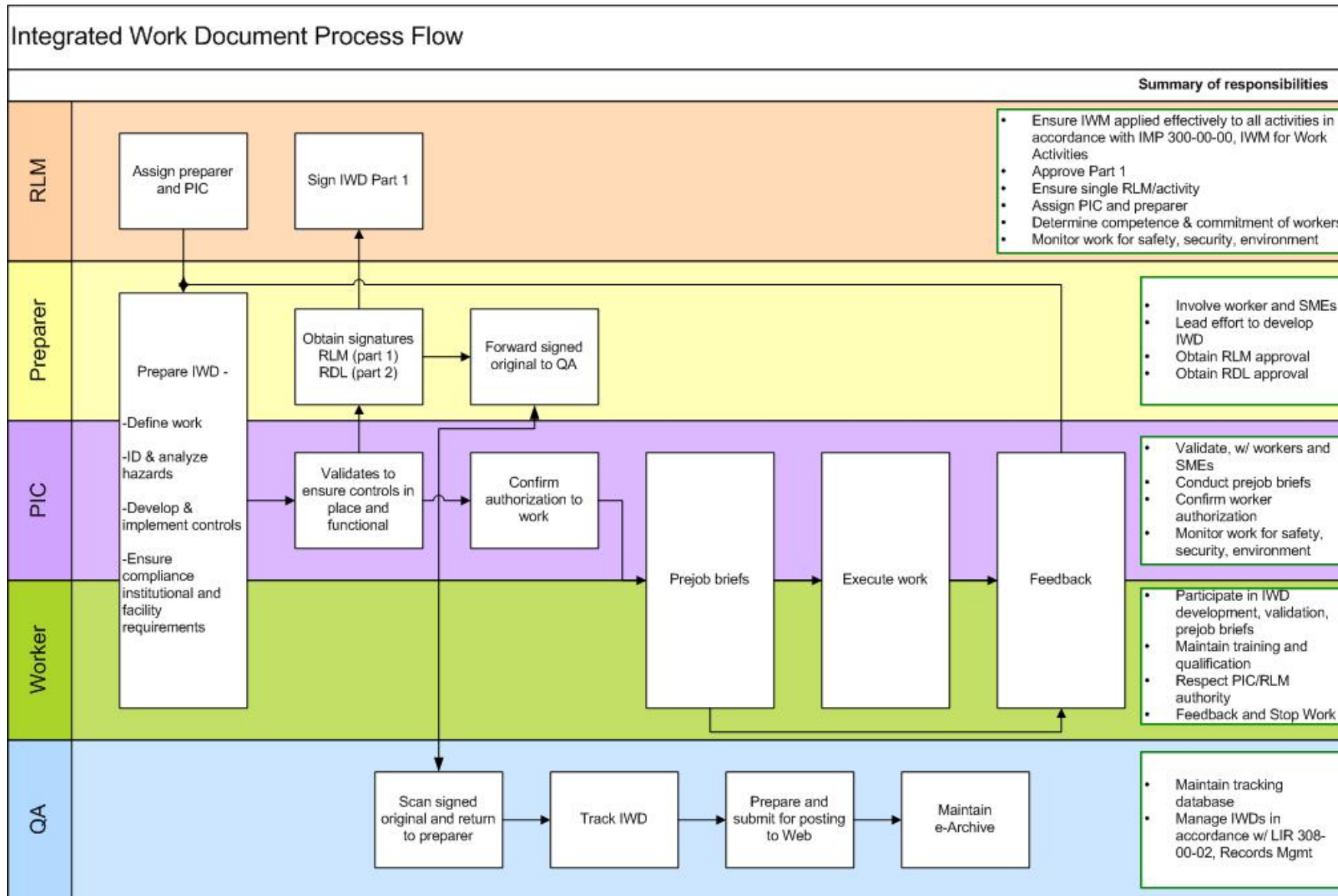
Training
prerequisites

Emergency
actions to take
in event of
control
failures

RISK DETERMINATION MATRIX: LIKELIHOOD VS SEVERITY

| Severity | Likelihood | | | | |
|--|---|---|--|---|---|
| | Frequent usual occurrence to likely occurrence, reasonably expected | Probable likely occurrence To irregular occurrence, infrequent | Occasional irregular occurrence, infrequent to slight chance of occurrence | Improbable slight chance of occurrence to highly unlikely occurrence | Remote highly unlikely occurrence to extremely unlikely occurrence |
| Catastrophic death, severe injury/ occupational illness, severe environmental harm or liability, or severe property damage | High | | High | Medium | Low |
| Critical major injury/ chronic impairment or occupational illness, major environmental harm or liability, or major property damage | High | | Medium | Low | Minimal |
| Moderate minor injury/ temporary impairment or occupational illness, minor environmental harm or liability, or minor property damage | High | Medium | Low | Minimal | Minimal |
| Negligible less- than-minor injury or occupational illness, less-than-minor environmental harm or liability, or less- than-minor property damage | Low | Minimal | Minimal | Minimal | Minimal |

Note: The risk levels shown in this table are not equivalent to the hazard levels in IMP 300-00-00.



Follow integrated work management guidelines - LANL IMP 300-00-00, Integrated Work Management for Work Activities
Follow change control process - LIR 300-00-07, Nonnuclear Facility Safety Basis
Follow records management process - LIR 308-00-02, Laboratory Records Management